DOCUMENT RESUME

ED 090 806 HE 005 316

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TITLE	Administration By Competency.
PUB DATE	11 Mar 74
NOTE	16p.; Paper presented at the 29th Conference on Higher Education, American Association for Higher Education, Chicago, Illinois, March 11, 1974
EDRS PRICE	MF-$0.75 HC-$1.50 PLUS POSTAGE
DESCRIPTORS	*Administration; *Administrator Education; Educational Needs; *Higher Education; *Performance Criteria; *Performance Specifications; Program Planning
IDENTIFIERS	*Illinois State University

ABSTRACT

This document presents an overview of the Illinois State University competency based program, "Administration By Competency." In an effort to generalize the approach, various questions are answered: How are competencies determined? How should they be stated? How is level of competency determined? How should competencies be organized? What delivery systems can be used to gain the competencies? Will a student be allowed to "test out" of a competency? How are enough valid pre-and post-tests developed? What keeps the program from being fragmented? How do you transmit and measure competency in the affective domain? How can you keep from having all tests be paper and pencil tests of the lower order? and What are some of the organizational questions likely to arise? (MJM)

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ADMINISTRATION BY COMPETENCY

CHARLES W. EDWARDS

Competency based instruction is a systematic means of identifying, meeting, and evaluating the needs of the students. There are three premises upon which this type of instruction is based. They are:

1. Learning can be divided into individual competencies.
2. We should measure the student's terminal performance on these competencies.
3. The total competencies should fulfil the desired student needs.

If a student is enrolled in a six week course at a community college to learn how to lay floor covering his needs are relatively simple to identify. It is quite simple to identify exercises that will provide learning experiences necessary to provide the student with each skill (need) required. It is also relatively easy to determine if the student has mastered each skill.

If on the other hand we look at a student embarked on a four year program to become a mathematics teacher, the task of identifying the needs of that student to enter the profession becomes a great deal more complicated than that of the student interested in laying floor covering. Regardless of the program, higher education must be able to identify and provide the student with the skills and knowledge needed to enter and succeed in his chosen field.

This systemizing of instruction helps in the selection and organization of learning activities. It also aids in communicating clarified requirements to the faculty and learner.

Illinois State University has a competency based program entitled "Administration By Competency." This program started with a list of over

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150 competencies identified by administrators as necessary to function in an administrative capacity. A grant from the Division of Vocational and Technical Education of the State of Illinois and the United States Office of Education made it possible to develop these, state them in measurable terms and initiate a one-year program for 16 students. The staff of the project first studied and then refined the competencies. Next each one was stated in measurable terms. These were then organized into five categories as follows:

1. General Administration
2. Program Planning
3. Personnel
4. Public Relations
5. Student Services

Within these areas the competencies were grouped together resulting in a final list of 42 competencies.

Below are listed some illustrative examples of the titles of these competencies:

Area 1 General Administrative

1.1 Administrative Structuring

1.2 Record Keeping

1.2 (1) Record Keeping, Personnel

1.2 (2) Record Keeping, Resources

1.5 Management by Objectives

1.7 Facilities

1.7 (1) School Plant Planning

1.8 Budgeting

Area 2 Program Planning

2.2 Program Budgeting

2.3 Gathering, Compiling, and Interpreting Data

2.6 Evaluating Program

Area 3 Personnel

3.1 Selecting and Employing Staff

3.1 (1) Developing Job Descriptions

3.1 (2) Ranking Candidates

3.1 (3) Interviewing and Hiring

3.2 Orienting Staff

3.3 In-service Training

3.4 Evaluating Instruction

Area 4 Public Relations

4.1 Involving Advisory Groups

4.3 Disseminating Program Information

Area 5 Student Services

5.1 Student Program Planning

5.2 Counseling Students

5.3 Reducing Drop-outs

Each competency was developed into an instructional package containing sub competencies to expedite the administration of the program. These are not self-instructional packages although they may form the basis for self-instructional materials. These instructional packages contain:

1. A TITLE PAGE - This labels the competency by title, number and other information that helps to identify the package.

2. A RATIONALE - This provides the student with a statement of the importance of the competency.

3. COMPETENCY STATEMENT - A statement of the behavior expected of the learner. It should be stated in measurable terms.

4. INSTRUCTIONAL OBJECTIVES - A listing of the sub-competencies that will guide the learner to the achievement of the stated competency. Again, these are stated in measurable terms.

5. PRE TESTS - Assessment instruments that will allow a student to prove he has a competency or will give him guidance in what he needs to learn to secure it.

6. LEARNING ACTIVITIES - A listing of the identified alternative delivery systems a student may select to achieve the competency.

7. POST TESTS - Assessment instruments that determine the learner's competency following participation in one or more of the learning activities.

Each package is being pilot tested with students and then revised. Alternative delivery systems are identified and, as far as possible, teaching materials are being developed for each package. Emphasis is being placed on simulation materials, games, video and audio tapes. Various experiences such as evaluation visits, workshops, and projects are used and evaluated for their ability to serve as delivery systems. Most of the students are on internships this semester for which we require them to spend a total of 18 days.

The internship setting is jointly agreed upon by the student and the project administration. Nearly all of the students have already exceeded the 18 days and many of them will probably spend nearly twice that number before they finish. The students are enjoying their internships and say they are gaining a great deal from them. They are enthusiastic about the program and have developed a high level of esprit de corps. The internships were scheduled during the second semester in order to give the students time to build as substantial a background as possible before going out into the field.

These internships are not of the listening and watching variety. The students are expected to take an active part in the operation of the educational institution in which they are placed. The placements were carefully screened for their ability to offer the students a sound experience and their willingness to involve the students. The experiences have varied from completing required reports to acting for the supervisor in his absence, chairing committees, helping plan new facilities, planning for the opening of a new installation, and the writing and follow-through of funding proposals. The response of the supervisors has been gratifying. They feel they have received more than they have given, a healthy situation if you need to use them as a placement in the future, and speak very highly of the preparation and enthusiasm of the students. The internships have helped the students to see the value of materials studied before going out into the field and have motivated them to complete the competencies. The on-campus work they are doing this semester shows the effect of the internship. They look at the competencies in the light of skills required to function rather than as material to be learned.

In all fairness it should be pointed out that these students were selected from many applicants for the program and therefore probably are above average. They are full time students and receive a tax-free stipend of $300 per month. At the end of the year those who have successfully completed the program will be awarded a masters degree and verification will be sent of their completion of the certification requirements for a level two administrative certificate. We have already had considerable interest shown in the hiring of the graduates of the program.

An added dividend that was not anticipated when the project was undertaken has been the possibility of using the learning packages as individual in-service training programs. Some of the packages have already been used in this manner. Faculty members, other than the project staff, who have worked on the packages have also used them in their regular classes. The response of faculty outside the staff has been most encouraging. Faculty from six departments in three colleges of the university have helped without pay to develop learning packages. One example of this is the sociology professor who helped write the package on Gathering, Compiling and Interpreting Data. He then made a presentation to the students and helped them work on the competency. This involvement of faculty in areas of their expertise has strengthened the program and helped gain acceptance for it across the university.

Many authors today are extolling the values of competency based instruction but few have addressed themselves to the decisions that must be

made or the problems faced in the implementation of such a program into an institution of higher education. Before embarking on a program of competency based instruction the following questions should be seriously considered.

HOW ARE THE COMPETENCIES DETERMINED? Probably the best way to determine the competencies needed would be to observe someone performing the desired task, if that task is relatively simple in operation. This becomes impossible in complex positions and another means must be found. Practitioners in any given field can provide a compilation of the basic needs of that field as they see them. Consolidation of the lists of a selected sample of these practitioners can provide a starting point. In some fields lists of needed skills are already available. Regardless of the source of the original list it is important to constantly refine and update the list.

HOW SHOULD THEY BE STATED? In order to operationalize the competencies it is desirable, if not mandatory, that they be stated in measurable terms.[1] Various terms such as behavioral objectives[2], terminal behavior[3], or performance objectives have been used. But, they all have one characteristic in common -- they must measure the performance of the learner. The terminal performance of the learner must be stated in measurable terms. There are two other components common of most measurable objectives. There is a statement of conditions or circumstances under which the performance will be carried out. There is also usually criteria or standards of minimum acceptable

performance. This format works well with objectives from the cognitive and psychomotor domains but becomes difficult to operationalize in the affective domain. This is no different from other statements of educational objectives and teaching as all have trouble in valid measurement of work in the affective domain. For the present such affective characteristics as attitude, values, and drive may have to be left to quite subjective evaluation. Probably the most we can do is evaluate the process, and hope for internalization.

HOW IS LEVEL OF COMPETENCY DETERMINED? The level of competency desired is usually that necessary to function satisfactorily upon entrance into the given field. This calls for a decision on the part of the faculty directing the program. This judgment will probably need to be modified from the experience of graduates. It should not be assumed that upon completion of the program the student will have skills equal to someone with years of experience. If the standards of terminal behavior are set too high it will be unfair to the students. If the standards are set too low the product of the program will not be able to function as desired.

HOW SHOULD THE COMPETENCIES BE ORGANIZED? One question that always arises is should each competency be self-contained or should some competencies be prerequisites for other competencies. In a great measure, this will depend on the program. Some programs lend themselves to free standing competencies while others require a sequential progression. If

there is a choice, select the free standing. It allows for more flexibility in rearranging as well as permitting the student more options. Free standing competency statements can be used outside the program, e.g., in in-service education. One common mistake is to make each competency too narrow and on too low a level. Stating cognitive competencies in terms of the lower two levels of the domain (knowledge and comprehension), as described by Bloom[4], is tempting to many because of the ease of developing and scoring the test items. The higher levels of application, analysis, synthesis, and evaluation should make up the majority of the competencies. One method of organization utilizes fewer broad competencies with several sub-competencies under each.

WHAT DELIVERY SYSTEMS CAN BE USED TO GAIN THE COMPETENCIES?

Many of the failures of competency based instruction occur because those in charge utilize only one delivery system -- the self-instructional mode. Motivation is quickly lost if this mode is used to excess. The affective domain can be most effectively taught in discussion-type settings. These can be in small groups or in a one-to-one arrangement. The more options open to learn a given task, the more likely that students can find a suitable mode. This also gives greater flexibility to the student in planning his program. Regular classroom courses still offer the best method of presenting new material to groups of students at the lowest cost. Competencies can be tested as part of the final or where the program has no close relationship with the course, testing can be done following completion of the course. Another mode

of delivery is the internship. This mode provides high motivation and results in practical learning. One of the drawbacks to this in the past, however, has been the uncertainty of what was to be learned. Competency based instruction can give some badly needed direction by specifying what behavior should be a part of the experience. With the guidance of the learning packages mentioned earlier, a wide range of experiences can be utilized to gain the desired knowledges. The packages, if modified, can serve as individualized learning materials. They utilize simulations, role playing, games, films, video tapes and audio tapes. There should be enough variety and use of different modes so that no one mode dominates the others. True flexibility can come only when there is more than one mode of delivery for each competency. The choice of which mode is to be used should be made jointly by the student and his advisor.

WILL A STUDENT BE ALLOWED TO "TEST OUT" OF A COMPETENCY?

The decision will have to be made as to the amount of work a student can test out of. Some institutions may wish to allow credit for this toward certification and not for a degree. There is a move in the direction of allowing credit toward the degree in some of the "open" type universities. Many institutions, however, may wish to give the student credit for the competency but require an equivalent amount of elective work to be taken toward the degree.

HOW ARE ENOUGH VALID PRE AND POST TESTS DEVELOPED?

Developing a sufficient quantity of tests is a time consuming chore. These tests for the most part can not be of the short answer or multiple choice

variety that test the lower levels of the cognitive domain. Tests that evaluate the upper levels of the cognitive domain are not only difficult to construct but equally difficult to score. These tests, however, tend to evaluate the total behavior rather than to be a sampling of the material to be learned as is the case with short answer or multiple choice. Tests of the upper levels often contain simulation activities that allow for analysis, synthesis or evaluation. Once the format is developed and the simulation set up it can be modified easily so that each testing is different from the preceding ones. Proper statement of the competency in measurable terms is probably the greatest help in determining the means of evaluation.

WHAT KEEPS THE PROGRAM FROM BECOMING FRAGMENTED?

The danger of fragmentation is greater in competency based instruction and and programs that try to identify individual skills and knowledges. It is especially true of those programs that allow for the delivery of individual components. One means of counteracting this is to maintain a quantity of coursework and interaction with faculty. Internships and experiences that place the student in the actual environment of a job help to provide the student with a perspective of the total job and ties together the individual competencies. In those programs with sequential competencies, the movement from one to another can aid in overcoming the feeling of disjointedness. This is particularly true if the sequence builds from the lower to the upper order skills as the student progresses through the sequence.

HOW DO YOU TRANSMIT AND MEASURE COMPETENCY IN THE AFFECTIVE DOMAIN? The transmission and measurement of competencies in the affective domain is far harder than in the other two. The major reason for this is that students can parrot back to the instructor what the student thinks the instructor wants without believing or internalizing it. The feelings and attitudes of people are hard to isolate and even harder to measure. Some programs, in order to say that their competencies are all measurable, go to great lengths to develop measurable indicators that have a relationship with the competencies. Unfortunately, the student can discover many of these indicators and feed the "instructor desired indicator" back to the instructor for the sake of passing the competency. A second danger is that in searching for a measurable indicator, the relationship between the indicator and the competency becomes invalid, i.e., the indicator does not really measure what the competency is set up to determine. In this domain we should evaluate the process by which we attempt to deliver the competency rather than the product. Process evaluation is not as acceptable as product evaluation if there is a means whereby the product can be measured. In this case we need better tools to evaluate in the affective domain. Until these tools are available we would be better advised to stay with process evaluation than to run the dangers of product evaluation. One very good reason for requiring internships and coursework is that the interaction between the students and their instructors is probably the only place where effective delivery can be made of those competencies in the affective

domain. This close relationship also permits the affective traits of the student to be observed and some attempt made to modify the student's behavior.

HOW CAN YOU KEEP FROM HAVING ALL TESTS BE PAPER AND PENCIL TESTS OF THE LOWER ORDER? While paper and pencil tests are used more often than other types in education today these are not the best suited to the evaluation of upper level skills. Evaluation of a student during a simulation exercise that affords a more realistic setting can be done by a jury or an instructor using a checklist. Evaluation can also be on the basis of the students oral solution given to an instructor. Another means is by observation of the student during his internship. The student can be given an assignment that can be evaluated on the student's ability to complete the assignment and not on his statement of how he would do it on paper. This is not being used extensively now because the present organizational pattern of classes means that everything including testing must be done in a group. Individual testing is time consuming and if merely added to a lecture schedule becomes an overwhelming time burden on an instructor.

WHAT ARE SOME OF THE ORGANIZATIONAL QUESTIONS LIKELY TO ARISE? Some of the organizational questions that must be faced in an institution that initiates a competency based program are:

1. How can the new program be phased into the present structure without disrupting the present programs?

2. How can the faculty needed to make the program a success be involved and "sold" on the merits of the program?
3. What changes in organization are necessary?
4. How will the clerical problems associated with keeping track of competencies be handled?
5. How will time for faculty to work with individual students on individual competencies be allocated?
6. Will the same grading system be used and if so what will be the basis for assigning grades?
7. How will faculty be evaluated in the program?
8. How will the program appear on the transcripts of students?
9. What will be student acceptance and what steps can you take to communicate with them about the program?
10. If certification is involved how will this be assured?
11. What procedures have been built into the program to provide for constant monitoring and regular evaluation?

These questions and many more will face the staff of the program. Most of the above can be worked out satisfactorily if anticipated in advance. The involvement of faculty in planning and problem solving is a must. Competency based programs require the faculty to adapt their present modes of delivery to new demands which will require a large expenditure of time and energy. If they are not involved and internally motivated, the chances of success are greatly decreased. They must understand the program and not be threatened

by it. The development of the learning packages for each competency takes more time than is expected and requires clerical help. The program must be tried out by a pilot group and then revised. The competencies and learning packages should be completed in their entirety before students are started in the program. These must, however, be constantly revised and improved.

Certainly the competency based instruction movement has focused attention on the need and value of more clearly defining objectives. Whether that is the extent of its impact on education or whether it becomes "the" system of education only time will tell. Probably the final placement of it will fall somewhere on the continuum between these two extremes.

FOOTNOTES

1. Division of Vocational and Technical Education, State of Illinois, WRITING MEASURABLE OBJECTIVES FOR CAREER EDUCATION (Springfield, Illinois 1972).

2. R. J. Kibler, L. L. Barker and D. T. Miles, BEHAVIORAL OBJECTIVES AND INSTRUCTION (Boston: Allyn and Bacon, Inc., 1970).

3. R. F. Mager, PREPARING INSTRUCTIONAL OBJECTIVES (Belmont, California: Fearon Publishers, 1962), p. 13.

4. B. S. Bloom, TAXONOMY OF EDUCATIONAL OBJECTIVES. THE CLASSIFICATION OF EDUCATIONAL GOALS, HANDBOOK I: COGNITIVE DOMAIN (New York: David McKay Co., Inc., 1956).